Jetstream 31 (J31) Flight Report for INTEX-B/MILAGRO
Flight VER08 flown 12 Mar 2006

A complete version of this report is posted at
http://www.espo.nasa.gov/intex-b/flightplanningJ31.cgi

Overview

Preflight goals focused on getting AOD & water vapor profiles and transects, SSFR fluxes, CAR circles, and RSP legs over the Gulf in the MODIS glint-free swath in the King Air lidar curtain near the Tampico and Tamihua AERONET sun/sky photometers. See planned and actual flight tracks in Figures 1 and 2.

Engine on: 1518 UT
Engine off: 1834 UT

Takeoff: 1548 UT
Land: 1830 UT

1638 UT Terra overpass

Cabin crew: Cairns, Cumbane, Hofmann, Livingston, Redemann (flight scientist), Trias

Pilot Summary

Went very well. Short on northbound track—cirrus. Spiral down. ATC very cooperative. Adjustments no problem. Got not quite to point 9.

Discussion of flight

Flight Scientist: Takeoff delayed slightly (~8 min) by traffic. Decent flight—not great in terms of weather. Target point looked to be under solid Ci. Worked south of target, King Air did too. Good communication with King Air. OD ~0.18 at bottom of ascent profile. RSP legs shortened by clouds. Area not good enough for CAR circles. Top of aerosol layer ~4 km. Spiral descent near Tamihua. 14 min run at 200' to look for gradient. Less Ci to South, no obvious AOD gradient.

Instrument Performance & Status

AATS: Did very well. Tracked well. No apparent pressure problem.

CAR: Instrument worked well. Ci prevented CAR circles.

RSP: Data looked good throughout. Prin plane looked really nice near WP 4. Coord w King Air seemed good. Cross-prin plane coord excellent. AOD~0.2 wherever there wasn't cirrus.

SSFR: Worked well.

POS: Operated fine. Never got green light on heading, setting for needed accuracy too high. Data probably fine.

NavMet: Data look very good. See Figure 3.

Flight Path, Timing, and Measurements (all times UT [VER local +6])

1550 15,000', Ascending to 15,000' in transit to pt. 2
1608 15,000', Widespread Ci en route.
1618 Descending in ramp pattern under Ci to give King Air time to catch up.
1631 200', Start low-level leg, Ci all around
1646 200', start spiral ascent in clear spot about 50 nmi SSW of pt. 4, AOD @ bottom ~0.18, with King Air above @ 1650 UT.
1658 4.15 km = top of aerosol layer.
1702 14,000', start 5-min leg in principal plane, heading ~320 deg.
1708 14,000', right turn 135 deg to maneuver for RSP.
1713 14,000', right turn to 210-215 deg.
1718 14,000', heading for point 9
1723 spiral descent near Tamihua sunphotometer
1737 200', low-level leg to find gradient, some Ci around, not in FOV.
1751 200', ascend to transit altitude
1815 14,000', looking for Ci-free near VER—negative RTB.

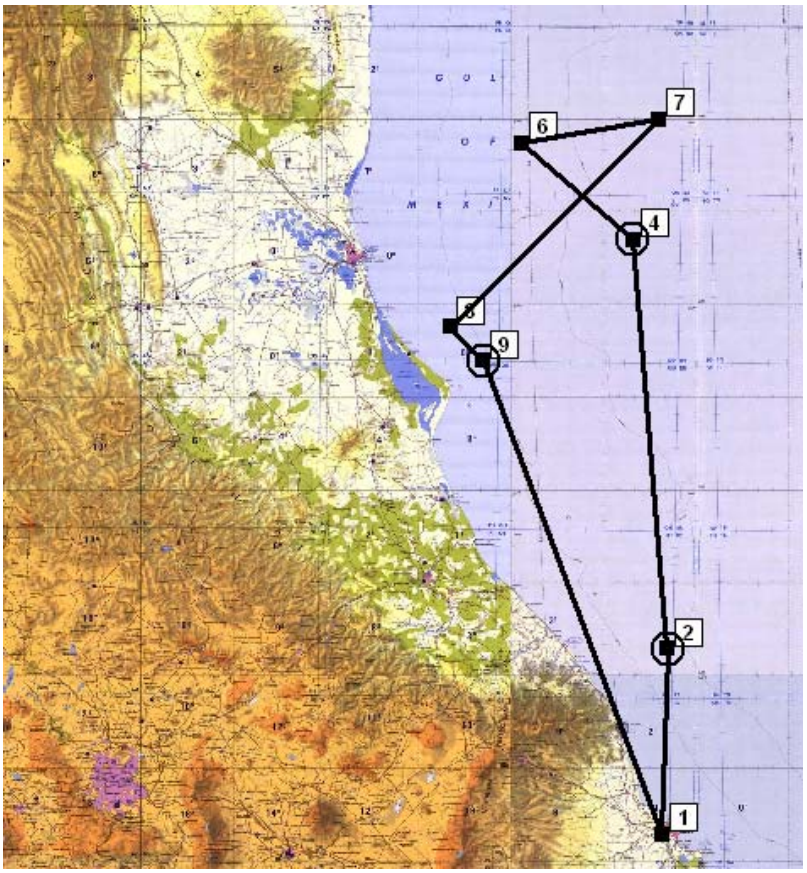

Figure 1. Planned flight track, J31 Flight VER08, 12 March 2006.

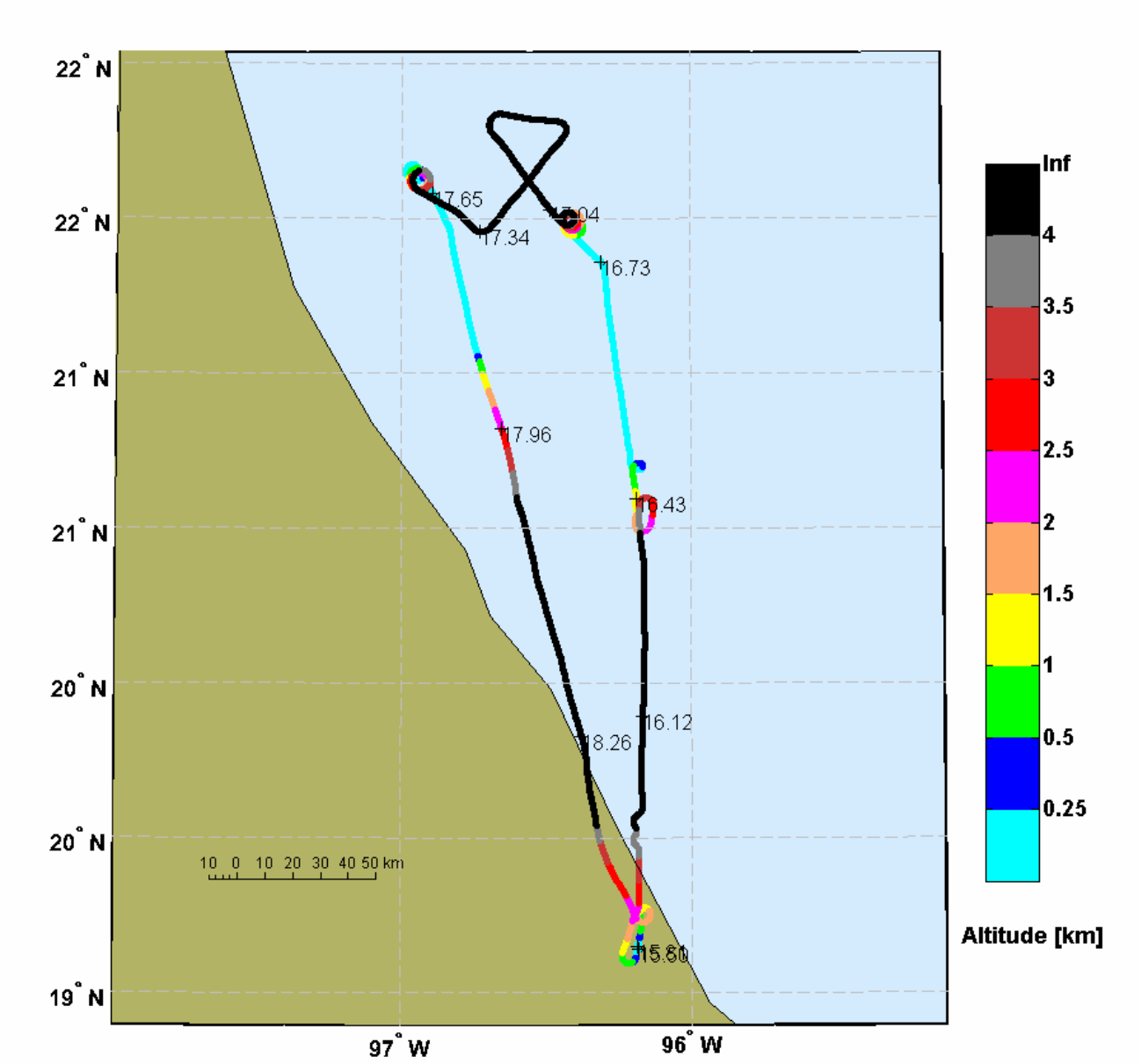

Figure 2. Actual flight track, J31 Flight VER08, 12 March 2006.

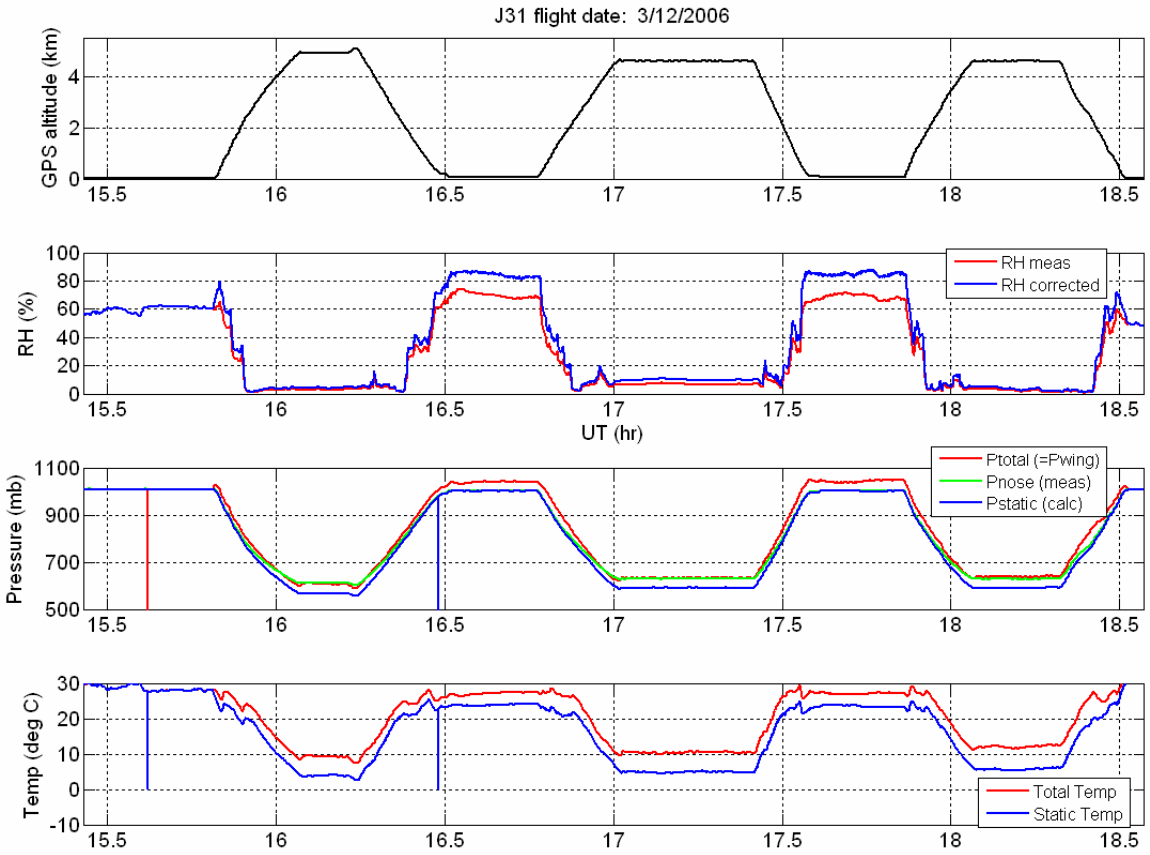

Figure 3. NavMet data, J31 Flight VER08, 12 March 2006.